

# COMPUTER FOCUS

Computer News for HP OEMs and Independent Software Vendors

February 1984



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PACKARD**

International

# COMPUTER FOCUS

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### On the Cover:

Now HP offers a complete family of large format drafting plotters. The new HP 7586B provides continuous roll-feed and long-axis plotting capabilities. The HP 7580B/7585B have exciting firmware enhancements and new lower prices. See article beginning on page 17.



## Applecourt Overturned: Object-Coded Systems Software Copyrightable

In its second decision about what are certainly crucial legal issues for the computer industry, the Third Circuit Court of Appeals reversed the District Court decision in *Apple Computer, Inc. v. Franklin Computer Corporation*. The holdings announced on August 30, 1983, by Judge Sloviter again faced squarely several important questions not covered in the Copyright Act of 1976 or its 1980 amendment. To appreciate the place of this case in an emerging line of decisions strengthening computer program copyright protection, a review is worthwhile.

The *Apple* case grew out of Franklin's appropriation of 14 of Apple's operating system programs, some of which were written to ROMs and others of which were normally distributed on floppy disks. All of these programs had been copied. Code in one contained the programmer's name, another the word "Applesoft." All were distributed with the Apple II computer only in their object code versions. Eleven of these programs were registered and deposited with the Copyright Office in their object code versions only. Apple brought suit to halt Franklin's distribution of all 14 of the programs. The trial court, on July 30, 1982, in a closely observed proceeding, had denied Apple's motion for a preliminary injunction.

Had this decision been upheld, the legal protection of computer software would have been dealt a crippling blow. The defendant's attack on the copyrightability of Apple's programs took several lines. Franklin had argued, and the district court agreed, that the indirect, impersonal, indeed inhuman nature of object code was at "the heart of this case." Instructions written in this "machine's language" were held uncopyrightable because there is no "human interaction." "To go beyond the bounds of this protection would be ultimately to provide copyright protection to the programs created by a computer to run other computers. With that," wrote Judge Newcomer, "we step into the world of Gulliver where horses are 'human' because they speak a language that sounds remarkably like the one humans use."

ROMs and operating systems were also considered by the trial court. Since copyright protects the expression but not the use of a writing, the attack here had focused on their utilitarian nature. As for ROMs, the court said "it may be more apt to describe an encoded ROM as a pictorial three-dimensional object than as a literary work." Operating systems were found to be "an essential element of the machine" and outside the scope of copyright.

Nevertheless, three days later, on August 2, 1982, even before news of the first *Apple* decision reached most of the industry, the appellate court for that same district, the Third Circuit Court of Appeals, reached essentially an opposite conclusion. The human intelligibility theory of copyrightability, long at the root of much uncertainty, was firmly rejected.

The outcome in *Williams Electronics, Inc. v. Artic International, Inc.*, set the stage for the reversal in *Apple*. In *Williams*, Judge Sloviter concluded that as a matter of law, ROM modules of the defendant's video game "Defense Command," which were undisputed knockoffs of the plaintiff's "Defender" modules, were infringing copies. The Artic ROMs, when dumped to a printer, even contained a salted Williams copyright notice.

Artic's defense rested entirely upon its assertions that ROMs are utilitarian, not "writings." The further argument that a distinction must be drawn between source code and object code was also based upon their intelligibility to human beings. Both arguments were rejected by the Third Circuit, closing the "unlimited loophole by which infringement of a computer program is limited to the copying of a computer program text but not to duplication of a computer program fixed on a silicon chip."

Based upon its *Williams* precedent and other recent authority, the Third Circuit readily disposed of object code and ROM issues in *Apple*. The *Apple* programs are "literary works" within the meaning of the statute, ROMs are a suitable medium on which such works may be inscribed, and the utilitarian functions of the ROMs are distinct. The ROMs are read by the computer and the program contained thereon does not thereby lose its character as a copyrightable writing.

**HP Computer Museum**  
**[www.hpmuseum.net](http://www.hpmuseum.net)**

**For research and education purposes only.**

The third issue identified by the Third Circuit in *Apple* was one not raised in *Williams*, whether copyright can exist in an operating system program. Franklin contended that an operating system program is *per se* uncopyrightable and is either a "process," a "system," or a "method of operation." Judge Sloviter, again pointing out the duality of the nature of a computer program, particularly one etched on a ROM, rejected this argument which, in his words, "mistakenly focuses on the physical characteristics of the instructions. But the medium is not the message."

His observation seems right on point. In fact, it is probably unfamiliarity with both the medium (the ROM) and the message (computer programs of any genre), which has led to the latest revival of the human intelligibility theory of copyright. That theory rears its head at intervals decades apart. When it does, it sometimes creates durable legal anomalies like *White-Smith* (pianola rolls), while sometimes it is quickly put down as in Learned Hand's opinion in *Reiss* (telecommunication code words). To illustrate, consider the example of a novelist's work when his typed manuscript is fed into an optical character reader (OCR). It is, at once, both a medium (the paper) containing a message (the novel) and a machine element. The OCR machine, of course, cares not at all about human intelligibility — which many modern novels never achieve anyway. It "looks" at the shape, size, and position of the characters and creates ASCII or other codes which may then be transmitted over a distance or accessed for word processing. Certainly the copyrightability of the novelist's work is not thereby called into question.

The Third Circuit in *Apple* did not rule on the validity of copyright registration of programs in object code. The Copyright Office currently accepts such applications and required depository material under what is called "the rule of doubt." A court ordinarily, in any infringement action, will first address the threshold question of copyright validity. Nevertheless, with *Apple* safely in the barrel, the volume of applications for program copyright registration may be expected to increase. Copyright rights in a program begin when the program is created and, unless surrendered or inadvertently lost, remain viable for years. But registration is required before any infringement action can proceed and before any of those rights can be enforced.

Registration before infringement occurs brings the program owner substantial additional benefits. These include eligibility for statutory damages, *prima facie* proof of program ownership and originality, and last — but far from least — award of attorney's fees to successful plaintiffs in infringement cases. If you contemplate registering your program, consult a competent expert for advice before you proceed.

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hp

## HP Technical OEM Conference Scheduled

The 1984 HP Technical Systems OEM Conference is scheduled for March 28-30, 1984 at Ricky's Hyatt Hotel in Palo Alto, California.

The objectives of the Conference are to:

- Further strengthen our *Working Partnership*
- Share HP's strategic directions and new product plans
- Provide a forum for interaction between senior managers
- Facilitate the sharing of ideas among our OEMs.

The agenda will focus on topics for the HP Series 1000 and HP 9000 OEMs. In addition to presenting HP's overall strategy for technical computers and OEMs, specific product family directions will be shared. Sessions on real-time automation, HP-UX, installation site planning, merchandising ideas and business planning are scheduled.

The conference is intended primarily for North American OEMs. International OEMs with a strong interest in marketing programs in the US may also attend. Please contact your HP sales rep for more information.

## International HP Computer Users Meeting Set for February

The HP International Users Group (IUG) — a non-profit association of Hewlett-Packard computer users — will hold its annual conference in Anaheim, CA, from February 26-March 2, 1984. Hosting the event will be the Southern California Regional Users Group (SCRUG), a 700-member affiliate of the IUG.

Conference speakers will offer an HP 3000 user's focus on topics ranging from datacommunications to application design. In addition, tutorials on Hewlett-Packard software, support, and future strategy will be

presented by delegates from HP, software contributions will be distributed in the form of a *swap tape*, and a vendor show will feature more than 120 exhibits of HP 3000-related products. Over 1,800 users are expected to participate.

Conference registration costs \$400. For further information, contact:

Conference Manager  
HP 3000 IUG  
2570 W. El Camino  
Mountain View, CA 94040  
Telephone: 415-941-9960

## 180 Customers Attend the First German Hewlett-Packard and Partners Conference

The first Hewlett-Packard and Partners Conference took place at the end of November 1983. This event was an essential vehicle to show the commitment and relationship of HP to its partners in the computer business. It was held in the Boeblingen Congress Hall and was attended by almost 180 participants of approximately 70 companies from Germany, Austria, and Switzerland.

Eberhard Knoblauch, general manager of Hewlett-Packard GmbH, stressed in his opening report that the company takes cooperation with its marketing partners very seriously, and he feels it should be intensified considerably in the future. In addition, Knoblauch demonstrated, by means of the provisional business figures for FY82/83, the security for the partners of working with a big company. He emphasized that our partners appreciate our quality products which show high engineering know-how.

Knoblauch's report was followed by Wolfgang Rucker's (sales manager, Germany) objectives for 1984. Wolfgang Rucker said: "We emphasize certain points in the development of our partner businesses. These include, in particular, a high presence on and penetration of the market, concentration on potential local markets, and provision of engineering know-how. Combine this with real cooperation with our distributors and system houses, and full customer satisfaction will result."

Dieter Egerman (region computer manager) commented: "We strongly rely on our partners because only through close cooperation with them can Hewlett-Packard achieve its hoped-for success." Egermann assured the partners that any support they need to be successful will be provided.

The Boeblingen conference was an important contribution to the partnership. It was an excellent opportunity to make personal contacts rather than having to rely on the *Hewlett-Packard PLUS Catalog* in order to learn about the partners' products.

Computer Marketing Manager Fritz Rombach described the marketing support given to Hewlett-Packard partners in detail. It includes timely information about software and hardware developments as well as market studies, financing consultation, cooperative advertising, and public relations — a comprehensive cooperative marketing program. He also mentioned cross-licensing as another important element, i.e., the reciprocal granting of licenses for software products.



*A small exhibition gave the partners the opportunity to present their "products."*

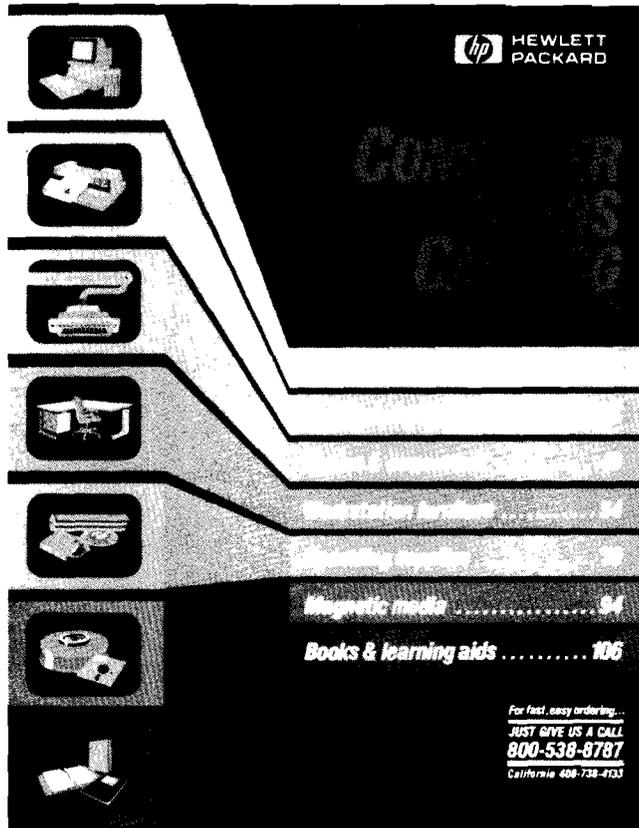
One segment of the market that is receiving increased attention from Hewlett-Packard partners is personal computers. In 1982, Hewlett-Packard could already claim approximately 15 percent of the personal computer market and a high 35 percent of the market for technical scientific personal computers.

On the second day of the conference, approximately 40 different partner systems were presented. The full range of available software systems was shown. In addition to user programs such as financial accounting or "wages and salaries," which are necessities for commercial computing needs, software was presented for some rather unique lines of business.

The conference almost resembled a stock market — in addition to a broad range of software being offered, there was ample demand for CAD/CAM programs and user software for publishing houses and printers. People were also interested in programs for medical insurance accounting and even in interfacing cash registers to computers. They took the opportunity to ask HP experts for advice regarding the services offered by Fritz Rombach.

Not only was HP pleased with the course of the conference, the other participants were equally satisfied with the first meeting of Hewlett-Packard and its partners. "It's very important for us to know that Hewlett-Packard takes the sales channels offered by the OEMs and software houses very seriously and values them highly," said Rolf Huxohl, managing director of the C-Bit Ltd. in Bielefeld-Sennestadt. His opinion was representative of most of the participants. "From our point of view, we especially appreciate the open information policy the manufacturer is cultivating. We would like this meeting to take place at least once a year so that we can learn from each other. These two days were really profitable for us all."

## Your Next Best Friend... the "Computer Users Catalog"



The Computer Users Catalog — *125 pages brimming with convenience products and the day-to-day supplies you need.*

Every minute of your time is precious — yet, you may often have “low ticket” questions that must be answered.

The new *Computer Users Catalog* helps you answer many of these questions. And because direct phone ordering is so easy, any residual doubts can usually be resolved while on the line to our telemarketing professionals.

Put more than 1,500 computer products right at your fingertips. One hundred and fifteen new products, more color photos and 25 extra pages make this the most complete catalog we've ever offered.

For easy referencing, the catalog has seven categories:

- Personal computers and software
- Peripherals and terminals
- Cables and connectors
- Workstation furniture
- Operating supplies
- Magnetic media
- Books and learning aids.

Extensive cross-referencing and three different indices help you quickly locate even obscure products. Compatibility guides and easy-to-use ordering charts help you understand how to configure and purchase items, such as cables, that in the past have required sales assistance.

### Fast, Easy Ordering — in the US

Make sure that you have the Autumn/Winter 83-84 *Computer Users Catalog*. It not only makes the job of selecting products easier, it also opens the door to HP's fast, friendly Direct Phone ordering system. You can order against your HP open account *or* charge your order to your VISA, Mastercard or American Express credit card.

Our professional telemarketing team is ready for calls between 9 a.m. and 5 p.m. in all time zones. Product availability and price are confirmed on-the-spot, and we ship within 24 hours of order receipt.

## Fast, Easy Ordering — Internationally

Special fast-order direct phone lines for computer supplies are now available in many countries — including the ones listed below — offering on-line price and availability information, as well as fast order entry. Of course, orders may be placed in the regular way through your local HP sales offices in those areas not yet served by these special phone lines.

Multiple catalogs for the international marketplace are stocked in sales office literature departments:

- 5953-2450(D) US edition.
- 5953-2450(UK) UK edition.
- 5953-2450(GE) German language edition. Available April 1984.
- 5953-2450(FR) French language edition. Available April 1984.
- 5953-2450 International edition, English language.
- 9301-0761 Japanese language.

## HP DIRECT ORDER

HP Fast Phones — the easy, direct way for you to order supplies, accessories, media, furniture and software.

Location	Telephone Number
United States	800-538-8787
California	408-738-4133
United Kingdom	0734-792868 0734-792959
France	(6) 928 32 64
Belgium/Luxembourg	(02) 762 32 00
Switzerland	(057) 31 22 54 or 31 22 59
Canada	(416) 678 94 30
West Germany	07031-142829 07031-223133
The Netherlands	020-470639
South Africa	802-5111 53-7954 28-4178
Canada	
Toronto Local	416-671-8383
Ontario	1-800-268-6982
Quebec	1-800-387-3417
British Columbia	1-112-387-3154
Other Provinces	1-800-387-3154
Sweden	08-7502027 08-7502028





## Information Transfer Between the HP-41 Calculator and Series 80 Personal Computers

The capability now exists to transfer data and programs back and forth between the HP Series 40 advanced programmable calculator and HP Series 80 personal computers. The HP 82938A HP-IL Interface for the HP Series 80 is what makes this possible.

There is a technical bulletin available which describes the programs involved for both the HP Series 40 and the HP Series 80 and the equipment required. The literature order number is 5953-5592, dated 11/83.

The processes described in the document are:

- HP Series 80 BASIC transfer program
- Transferring data in HP-41 storage registers to an HP Series 80
- Transferring HP-41 data from an HP Series 80 to an HP Series 40
- Transferring an ASCII file from HP-41 to an HP Series 80
- Transferring an ASCII file from HP Series 80 to an HP-41
- Transferring an HP-41 program to an HP Series 80 Computer
- Transferring an HP-41 program from an HP Series 80 to an HP-41
- Printing HP-41 programs on an HP Series 80 printer.

The actual program listings are available along with step-by-step detailed comments explaining the programs. For more information about how you can get more from your HP Series 40 calculator and HP Series 80 computer, contact your HP sales rep.

## Current Revisions of HP Series 80 Software

What follows is a list of the current revisions of all HP Series 80 software and changes made to the HP-86/87 core software (WORD/80, FILE/80, HP-86/87 VisiCalc®, HP-86/87 Graphics Presentation and Data Communications) between each revision.

### WORD/80

WORD/80 is currently at revision B. It started shipping July 1, 1983.

**Enhancements:** Enhancements from revision A to B

were increased speed, pause for single sheet printers, automatic electronic disc support, national language keyboard support, and extended PUT capabilities.

**Bug Fixes:** A number of minor bugs were fixed.

**Hardware Requirements:** WORD/80 now requires 128K bytes RAM versus 96K bytes for revision A.

### FILE/80

FILE/80 is currently at revision B. It started shipping August 1, 1983.

**Enhancements:** Enhancements from revision A to B were: increased speed, electronic disc support, national language keyboard support, more flexible data structure (non-unique primary keys), and query data dump capabilities.

**Bug Fixes:** Inability to print with the HP-IB HP 2602 printer and other bugs were fixed.

**Hardware Requirements:** FILE/80 now requires 128K bytes of RAM versus 96K bytes for revision A.

### HP-86/87 Graphics Presentation

The HP-86/87 Graphics Presentation Package is currently at revision C.

**Enhancements:** The enhancements made from revision A to B were: support for the HP-86 (proper screen aspect ratio), GRAF file support (ability to store raster versions of a slide for use with other programs), and printer support (for dumping charts to a graphics printer).

The enhancements made from revision B to C were: electronic disc support, national language keyboard support, and HP 7475 support.

**Bug Fixes:** No major bugs.

**Hardware Requirements:** No change from A to B. Revision C requires 128K bytes RAM versus 96K bytes for revision A and B.

### HP-86/87 VisiCalc

HP-86/87 VisiCalc is currently at revision B. It started shipping in late 1982.

**Enhancements:** There were no enhancements made to VisiCalc at this revision.

**Bug Fixes:** A major bug affecting the LOADING of data (data disappeared when loaded) was fixed.

**Hardware Requirements:** No changes were made in the requirements for the package.

### HP-86/87 Data Communications

This package is currently at revision C.

**Enhancements:** There were no enhancements between revision A and B.

The following enhancements were made between revision B and C: increased data integrity, full allocation (HP-86/87 version) for increased speed, and addition of NO HANDSHAKE mode.

**Bug Fixes:** Between revisions A and B, a problem with the REMOTE CONSOLE mode forced the revision.

No bugs were fixed between revision B and C.

**Hardware Requirements:** No change.

### Current Series 80 Revisions

The following table shows the current revision of all HP Series 80 software:

HP-85 Package Name	P/N	Rev.
BASIC TRAINING	82802A	A
GENERAL STATS	82804A	A
FINANCIAL DECISIONS	82803A	A
MATH	82811A	A
CIRCUIT ANALYSIS	83810A	B
GAMES	82818A	A
LINEAR PROGRAMMING	82808A	A
TEXT EDITING	82816A	B
WAVEFORM ANALYSIS	82809A	B
BASIC STATS. . .	82805A	A
REGRESSION ANALYSIS	82806A	A
GRAPHICS PRESENTATION	82801A	C
VisiCalc Plus	8w800A	C
INFORMATION MGT	82817A	B
SURVEYING	82813A	B
GAMES2	82819A	A
PORTFOLIO MGT.	82814A	A
DATA COMMUNICATIONS	82821A	C
MODEM	82950A	A

HP-86/87 Package Name	P/N	Rev.
BASIC TRAINING	82832A	A
GENERAL STATS	82834A	A
FINANCIAL DECISIONS	82833A	A
MATH	82841A	A
CIRCUIT ANALYSIS	82840A	B
LINEAR PROGRAMMING	82838A	A
WAVEFORM ANALYSIS	82839A	B
BASIC STATS. . .	82835A	A
REGRESSION ANALYSIS	82836A	A
GRAPHICS PRESENTATION	82831A	C
VisiCalc Plus	82830A	B
SURVEYING	82843A	B
DATA COMMUNICATIONS	82821A	C
MODEM	82950A	A
CP/M <sup>®</sup>	82900A	B
UCSD p-System		
UCSD Pascal	82825A	A
FORTRAN 77	82826A	A
WORD/80	82823A	B
FILE/80	82824A	B

### Software Updates

Currently, there are update parts available from HP's Computer Supplies Operation for some of the core software. The following is a list of the current products available. For more information, contact your local HP sales rep.

Product	P/N
WORD/80 Rev. B.	
3½"	82823-17301
5¼"	82823-17501
FILE/80 Rev. B.	
3½"	82824-17301
5¼"	82824-17501
HP-86/87 Graphics	
Presentation Rev C.	
3½"	82831-17301
5¼"	82831-17501
HP-85 Graphics	
Presentation Rev C.	
Tape	00085-17101
5¼"	00085-17501
Series 80 Data	
Communications Rev C.	
Tape	00085-17102
5¼"	00085-17503
3½"	00085-17301

*UCSD p-System and UCSD Pascal are registered trademarks of the Regents of the University of California.*

*VisiCalc<sup>®</sup> is a registered trademark of VisiCorp.*

*CP/M is a registered trademark of Digital Research Inc.*

## HP-85 Product Offering Simplified

On February 1, 1984, the HP-85 computer product offering will be reduced from nine versions to just one. The HP-85A and the HP-85B Options 001 through 007 will be obsoleted. The HP-85B (standard) will be retained, but it will be enhanced to include a built-in Input/Output ROM.

Interfaces such as HP-IB, HP-IL, RS-232C, BCD, or GPIO, will no longer be bundled with the HP-85B, and must be purchased separately. However, system prices will be the same.

The HP-85A Upgrade Kit (P/N 82972A), which converts an HP 85A to the functionality of an HP-85B (including built-in I/O ROM), will be available through April 30, 1984. Beyond that date, if you want to upgrade an HP-85A, you will be able to order the components of the kit from the HP Corporate Parts Center. Contact your HP sales rep for details.



## New 1600 bpi Mag Tape Option for Micro/1000 Systems

Effective November 1, HP is offering a 1600 bpi mag tape media option on the HP 2486A, 2487A and 2489A Micro/1000 systems. The media for the RTE-A operating system will be unbundled from the core system and you will have to select one of the following no-charge media options:

- Option 022 System S/W; CS-80 compatible cartridge tape
- Option 044 System S/W; 3½" microfloppy
- Option 061 System S/W; 1600 bpi mag tape.

(The above was implemented on the 2186D system product on October 1.)

We will also be offering the following memory plus software value pack products with software on 1600 bpi mag tape for the Micro/1000 systems:

- Option 131 BASIC value pack on 1600 bpi mag tape
- Option 132 FORTRAN 77 value pack on 1600 bpi mag tape
- Option 133 Pascal value pack on 1600 bpi mag tape.

For more information, contact your local HP sales rep.

## New Peripherals for the HP 1000

With the next revision of the HP 1000 software (to be released this month), HP will support the following peripherals:

### • HP 2932A/3A/4A Printers

These new lower-priced dot-matrix printers from HP's Vancouver Division feature 200 cps print speed, bar code printing, and near-letter quality print (HP 2934A only). They are plug-compatible with the HP 2631B.

### • HP 82906A Printer

The HP 82906A is a higher performance version of the HP 82905B personal computer dot-matrix printer that HP currently sells. The HP 82906A features 100 cps print speed and has an HP-IB interface. It is used with the HP-IB interface driver, ID.37, which means that users must provide their own top-of-form control.

### • HP 2687A Printer

This is the 12 page/minute laser printer announced in September 1983 by HP's Boise Division. This printer will be supported on the HP A-Series only, and must be used with the HP 12040B multiplexer because it utilizes the X-on/X-off handshake provided by this interface.

### • HP 2563A Printer

This is the new 300 lpm dot-matrix line printer also from HP's Boise Division. It is plug-compatible with the HP 2608S, and will be supported with the HP A/E/F-Series computers. This printer has 75% of the performance of the HP 2608S at about 50% of the price.

### • HP 2625A/28A Terminals

These two new terminals from HP's Roseville Terminals Division feature smooth scrolling and a full feature set. The HP 2625A has dual datacomm ports, one of which can be used to emulate an IBM 3276 terminal.



## HP Series 68 I/O Bay Has Been Released

The auxiliary I/O bay for the HP Series 68 has been released with MPE-V/P. This is good news for those of you who need the expansion before MPE-V/E is ready. However, there are some issues that you need to be aware of when taking delivery of the I/O bay. Although the I/O bay is a released product, only limited configurations will be supported with the MPE-V/P operating system.

The following limitations apply to the support of the auxiliary I/O on an HP Series 68 with the MPE-V/P operating system.

- Only two IMBs will be supported. If you currently have two IMBs on the system, when the I/O bay (with the third IMB) is installed, one IMB must be removed until the delivery of MPE-V/E.
- Only a maximum of 152 terminals will be supported. Of these terminals, 144 can be point-to-point. The maximum number of modem terminals is 143. The session limit is still 110.
- Only 16 INPs are supported
- In general, the configuration must be examined to determine the feasibility of large hardware additions to the system. Because MPE-V/P does not have expanded tables, it is possible to configure a system that is not usable because of software limitations. Areas that must be considered, in addition to the number of sessions, are the number of LDEVs (logical devices), DSTs (Data Segment Table entries) and CSTs (Code Segment Table entries). You should consult with your sales rep to ensure that any proposed hardware configuration can be supported with the MPE-V/P software.

It's important to remember that the release of MPE-V/P means that you can install the third bay now and easily move to MPE-V/E when it's available. Contact your local HP sales office for more details.

## New Laser Printers Supported on HP 3000

HP is pleased to announce support for the HP Series 1200, models 2687A and 2688A laser printers (available from HP's Boise division) on the HP 3000 computer family.

### HP 2688A Support

The HP 2688A is supported via HP-IB only. Two HP 2688As can be attached on the HP 3000 Series 39, 4X and 6X systems. One HP 2688A may be attached on the Series 30/33. The HP 2688A printer is not supported on the HP Series III. Currently, HP supports a maximum of two HP 2680 laser printers on the Series 30/33, Series III, and the Series 39, 4X, and 6X. With the introduction of the HP 2688, the total number of page printers supported on each of these systems will remain the same. In other words, you may have a combination of HP 2680s and HP 2688s, but the total number of page printers may not exceed two. The HP 2688 is a high-speed device shipped with four electrical device loads (variable from one to eight). It requires one meter of internal cabling.

### HP 2687A Support

Using an ATP connection, two HP 2687As can be supported on either a Series 39 or 4X and four HP 2687As can be supported on a Series 6X. However, if the HP 2687A is configured via the ADCC, only one can be supported on the Series 4X. The HP 2687A is not supported on the Series 30/33 or Series III systems. It is important to note that while the HP 2687A may be up to 500 meters from the CPU using the RS-422 connection, it is not supported in a remote configuration (for example, over modems) at this time. HP's Boise Division is in the process of testing this type of configuration in an attempt to provide remote support in the future. Also, the HP 2687A is not supported via MTS.

The HP 2687 is not supported as a system printer. This is because the HP 2687 uses X-on/X-off handshaking only and therefore is unable to send back an ID status to the CPU. In addition, as an RS-232 device, data integrity and high throughput cannot be guaranteed. These characteristics prevent the HP 2687A from being classified as a system printer. In cases where this presents a concern for you, please call your local HP sales rep for assistance.

## Availability

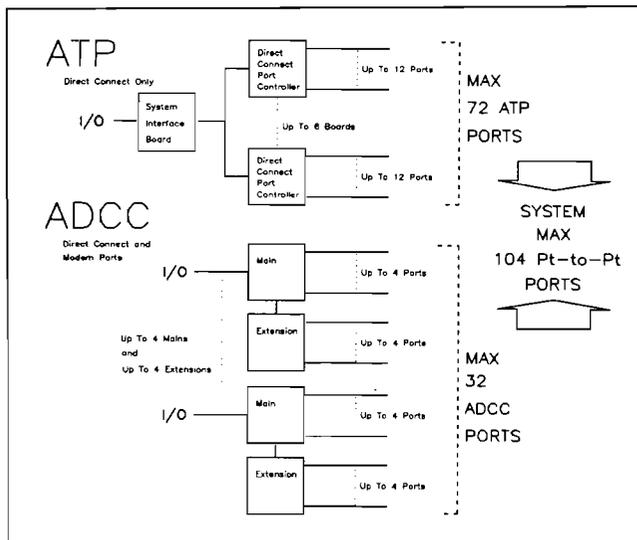
Both the HP 2687A and HP 2688A may be ordered immediately. Both printers are supported on the Q-Delta-2 MIT and MITs following Q-Delta-2. For those of you who require HP Word (available on both the HP 2687 and the HP 2688) or AGL Graphics (available on the HP 2688 only), support is available on the Q-Delta-2 Product Tape available from HP in the first quarter of 1984.

Small in size and big in performance, these new products will prove to be a high-quality, reliable printing solution.

## Get the Power of HP Series 48 with ADCC to ATP Upgrade

For all of you who asked for the ADCC to ATP upgrade on the HP 3000 Series 48 — now it is here.

ADCC mains and extenders can be returned for credit toward the purchase price of an ATP Direct-Connect Port Controller. Since the HP 3000 Series 48 includes disc caching, I/O constraints are released, and the HP Series 48 can support 40 more point-to-point ports than the HP Series 44.



Following are the key features offered by the ATP on the HP Series 44/48 that are not available with ADCC:

- 12 ports per ATP port controller versus 8 per ADCC subsystem (main and extender) frees I/O backplane slots to increase the maximum number of terminals on the system from 64 to 104, or to add other I/O cards
- Direct Memory Access (DMA) data transfer off-loads terminal character processing from the HP 3000 SPU
- Both RS-422 and RS-232 are supported for local terminals
- 19200 bits/sec maximum data transfer rate
- The ATP on-board buffering virtually eliminates the possibility of data overrun
- On-line diagnostics testing to support system up-time
- Efficient hardware/software design minimizes utilization of SPU (System processing unit) to support terminal I/O.

Note that on the HP 3000 Series 44 and 48, the ATP supports only directly connected terminals; the ADCC must be used for modem ports, PBX ports, and for connections to the system console.

To receive credit for ADCC mains and extensions for ATP Direct-Connect Port Controllers, order the products listed here as they apply. Up to two credits (main, extender, or both in any combination) can be applied toward an ATP Direct-Connect Port Controller.

P/N	Product Description
HP 30018AN	Return credit for DSN/ADCC-Main <i>The Opt. 044 cable must be returned at the same time to receive the credit</i>
HP 30019AN	Return credit for DSN/ADCC-Extension <i>The Opt. 044 cable must be returned at the same time to receive the credit</i>
HP 30145A	DSN/ATP Direct-Connect Port Controller: 12 HP Direct-Connect Type RS-422 ports.
Opt. 002	Replaces four HP Direct-Connect Type 422 ports with four HP Direct-Connect Type RS-232 ports. Up to three Opt. 002s may be ordered with any one HP 30145A.

If the HP Series 44 or 48 do not already have a System Interface Board (SIB) installed, order one HP 30144A ATP-SIB.

Contact your local HP sales rep for more information.

## MPE-V/P Boosts HP 3000 Performance

In early December, HP released MPE-V/P software for new and box-swap upgrade systems and for currently installed HP 3000 systems that have ordered a field upgrade. MPE-V/P Release #1 is a site-specific installation tape planned *only* for customers who have ordered the disc caching product included with the HP 3000 Series 42, 48, 68, and the high performance Series 39 and with the field upgrades.

MPE-V/P and disc caching offer you new levels of I/O and system performance. MPE-V/P has been built onto the reliable MPE-IV Q-Delta-2 base operating system. Though MPE-V/P includes several new features and product improvements, by far the most significant enhancement is the support of disc caching.

Disc caching software measurably improves HP 3000 I/O performance by using main memory as a high-speed buffer for disc-resident information. This fully transparent new software may be activated, disabled, and monitored by your customer's system manager or supervisor. Performance tests have demonstrated that disc caching can produce dramatic improvements in throughput and response time, particularly for I/O-intensive, multi-user applications. In a benchmark test performed in Atlanta for one of HP's major accounts, a Series 64 running an early version of disc caching outperformed an IBM 3033 in a batch MRP run. Equipped with disc caching, MPE-V/P provides your customers the means to achieve a major breakthrough in HP 3000 performance.

Among the other enhancements appearing on MPE-V/P, OPT/3000 has been updated to show how disc caching utilizes system resources. New OPT displays not only summarize CPU, disc, and memory-related activity, but also indicate how disc caching is affecting resource usage and system performance. The new version of OPT/3000 will enable your customers to better manage their HP 3000 performance. Accompanying these OPT enhancements are changes to various SE diagnostic utilities, targeted for the most part towards disc-caching analysis. For example, a new dialogue has been added to the dump analysis tool to reflect the use of disc-caching tables. MPE-V/P features a completely updated set of tools and capabilities that allow users to achieve and maintain higher levels of performance.

All of these features of MPE-V/P have been engineered with an emphasis on quality. Several new standards implemented during MPE-V/P development have improved the quality of software coding and testing. The module ownership system promotes high-caliber software development by assigning each module to a particular engineer. As a result, outstanding programming efforts can be more easily encouraged and recognized. Testing and debugging efforts have been streamlined through the use of the privileged-mode bounds checking tool (PMBC). This microcode-resident diagnostic enables lab engineers to detect mysterious addressing errors quickly and efficiently. The PMBC helped reduce overall MPE-V/P testing cycle time by eliminating potential defects early on.

The introduction of MPE-V/P is another step in HP's drive for higher quality, better performing system software. This latest release provides you with a solid base for developing and executing HP 3000 applications.

## DSN/MTS Spooled Printer Support Update

Some confusion seems to have resulted from the announcement concerning MTS support of spooled character printers for HP 3000 systems running MPE-V. This enhancement supports:

- Serial printers as spooled devices or application-controlled devices when they are connected to an HP 2333A Multipoint Cluster Controller, or
- The second port of an HP 2624B CRT on an MTS link.

Please note that the only supported CPUs are the HP 3000 Series 39, 40, 42, 44, 48, 64, and 68. The only supported Operating Systems are MPE-IV Q-Delta-2 and MPE-V. There are no plans to support MTS Spooled Character Printers on MPE-VR or the HP 3000 Series III, 30, or 33.

The enhancement allows HP 3000 users to have both terminal access and spooled printing at a remote site — all on the same link. There are some limitations and performance considerations, though. Contact your local HP sales rep for the details.



## Introducing HPL 2.1

HP Series 200 owners who order the RAM-based HPL language system after January 1 will receive a revised version called HPL 2.1. The new version replaces HPL 2.0 and has the same product number (HP 98614A). HPL 2.1 contains bug fixes, and is HP's last planned revision of HPL.

Current RAM-based HPL customers who are on SSS or SIS (HP 98082K/S) will receive HPL 2.1 updates soon. A ROM- or RAM-based HPL 2.0 to RAM-based HPL 2.1 upgrade kit is available for customers not on support services (P/N 98614-17XX00).

The new HPL system requires the same amount of RAM as 2.0. In conjunction with revising HPL, three new peripherals are now supported by HPL 2.0 (ROM- and RAM-based versions) and by HPL 2.1. They are:

- HP 7475A Plotter Option 002
- HP 2932A/2934A Printers
- HP 9133V Option 004 5M byte Winchester Drive (segmented version only).

HPL 2.1 does not support new hardware configurations; that is, HPL does not support the Models 220 or 236C.

ROM-based HPL 2.0 is still available. There are no plans to offer HPL 2.1 in ROM.

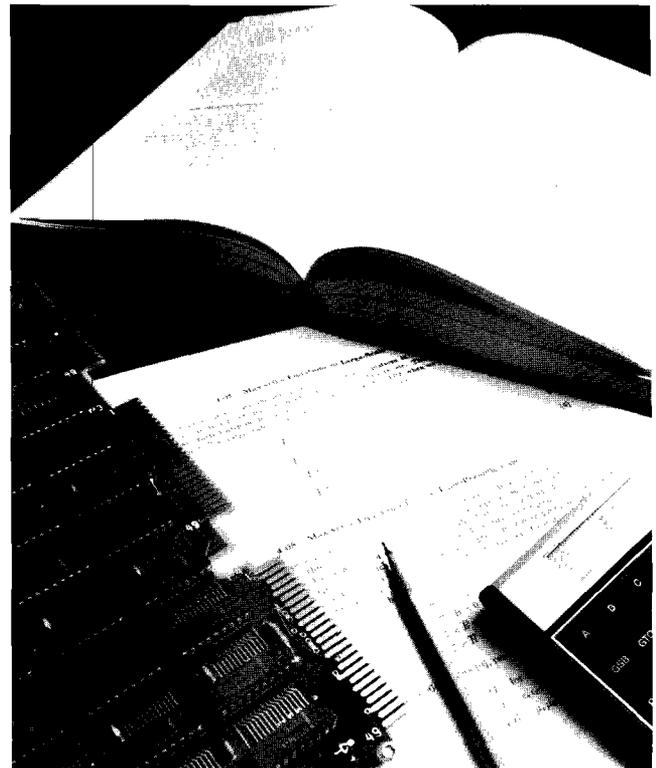
## New Document Formatter for HP 9000 Series 200 Users

HP has introduced the tool to open the door to technical word processing. We can give you complete control of your technical documents.

HP TeX (P/N 33402A) is a sophisticated document formatter that enables engineers and scientists to produce high-quality technical manuscripts and documents.

Through use of user-defined macros, you can format complex expressions and notations typically reserved for typesetters. HP TeX also allows underlining, sub- and superscripts, footnote placement, exponents, and kerning.

To print HP TeX output, the HP Series 200 supports the HP 2688A workstation laser printer (see "Additional System Support for HP 2687A and HP 2688A" in this issue). The laser printer, introduced in September, 1983, is a 12 page-per-minute device that allows you to use up to 32 character fonts per printed page.



This winning combination of the HP TeX document formatter and the HP 2688A workstation laser printer will offer you a solution for their documentation needs.

## HP 9000 Series 200 HP-UX Hardware Runs BASIC, Pascal, and Applications

The HP Series 200 HP-UX uses a faster processor board with cache memory, but no user RAM. You'll be glad to know this hardware can also run the BASIC 2.1 and Pascal 2.1 stand-alone systems. These are fully supported.

We are presently qualifying applications software and have yet to find an application that doesn't work. So far, HP EGS/200, HP 2622A terminal emulator (HP 98790A), asynchronous terminal emulator (HP 09800-10X80), and IBM 3270 terminal emulator (HP 98795A), have been qualified. A number of other packages are being qualified.

Contact your HP sales rep for more information.



## Changes to HP 264X Terminals

The HP 264X family of terminals was successfully modified to pass FCC and VDE Level A RFI regulations effective October 1, 1983. All units built after that date (identified by serial prefixes of 2336A or later) comply with the regulations.

As a result of RFI modifications, some models were made obsolete and others had feature and option changes. In addition, changes were made to accessory and "special" products.

### Obsolete Products

The HP 264X family now consists of the HP 2645A, HP 2647F, HP 2648A and HP 2649A. Products that have been obsoleted from the product line are listed below. A list of alternative terminals with similar feature sets is also provided.

Obsolete Products	Alternatives
HP 2641A	None, APL/3000 is obsolete
HP 2645N	Option 002 or 012 on HP 262X terminals
HP 2645R	None
HP 2645S	Option 001 on HP 262X terminals
HP 2647A	HP 2647F
HP 2649B	HP 2645A
HP 2649C	HP 2648A
HP 2649E	None
HP 2649G	HP 2647F
HP 2649I	HP 2647F Option 890 (deletes graphics)
Opt 005 (All HP 264X)	Option 005 on HP 262X

### Feature Changes

As a result of RFI modifications, the following features are now standard:

- 16K of memory: 12K for display (the maximum possible) and 4K for datacomm buffering
- Display enhancements: Underline, inverse video, blinking, and half-bright
- Line drawing, math, and large character sets
- Upper and lower case Roman character sets.

### Option Changes

The following options are no longer necessary since the features are now standard:

Option	Description
003	Display Enhancements
004	Display Enhancements, and Large Character sets
008	Adds 4K Display Memory
009	Adds 8K Display Memory
100	Roman Character set (was option on HP 2649A only)

### Accessory Product Changes

The following is a summary of changes to HP 264X accessory products:

- 13231A (Display Enhancements) is no longer required; it can still be ordered for use with terminals having serial prefixes of HP 2336A and prior
- 13234A (4K RAM Memory) is obsolete. Order 13297A Universal RAM Memory
- 13297A (Universal RAM Memory) now comes standard with 16K. Previous standard was 8K. Option 002 (16K) is obsolete.

*Note:* If you have previously ordered memory accessories, you may need to reevaluate your needs since you now receive more standard memory.

### Obsolete Specials

The following special options are no longer available due to RFI modifications:

Obsolete	Special	Description
HP 13296A	Option H19	Delete Load Box. HP 13296A (HP-IB) no longer requires load box.
HP 2647A	Option D99	DC1/DC3 Handshake. Now standard on HP 2647F.
HP 2649A	Option H15	Delete Display Logic
HP 2649A	Option S95	Delete Display Timing
HP 2649B	Option E70	IBM 3275 Emulation

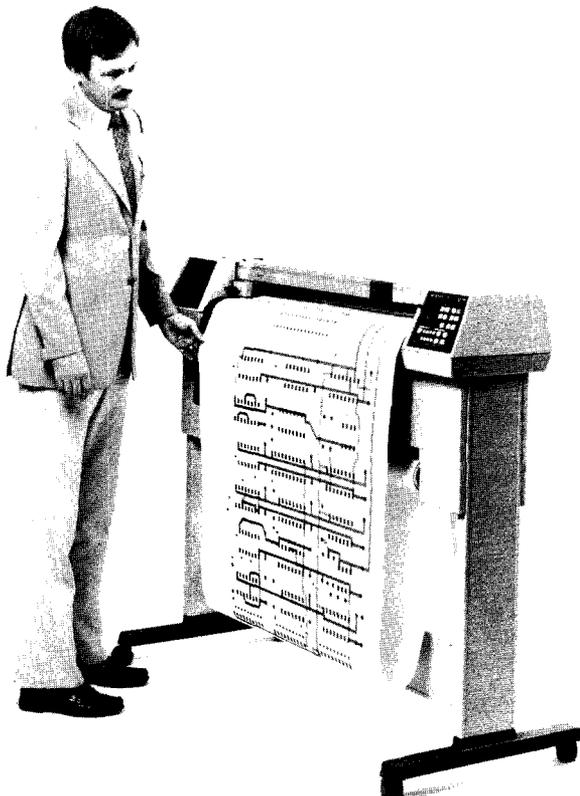
In addition, other specials have been obsoleted due to low demand. These are:

Obsolete	Special	Description
HP 264X	Option B99	Brightness Control
HP 264X	Option E34	Delete Keyboard
HP 264X	Option S99	Add Simulator, Delete Keyboard
HP 93983C		029 Upgrade Kit
HP 93989A	Option 004	Composite Service Manual. Order from CSO as P/N 02640-90170.



## New Roll-feed Drafting Plotter Plus Enhancements and Price Reductions on Current Drafting Plotters

Hewlett-Packard now offers a complete line of large format drafting plotters. On February 1, we introduced our new roll-feed drafting plotter, the HP 7586B. At the same time we announced exciting enhancements and reduced prices on current models, the HP 7580B and HP 7585B drafting plotters.



*The new HP 7586B long-axis drafting plotter combines single-sheet and roll-feed capabilities.*

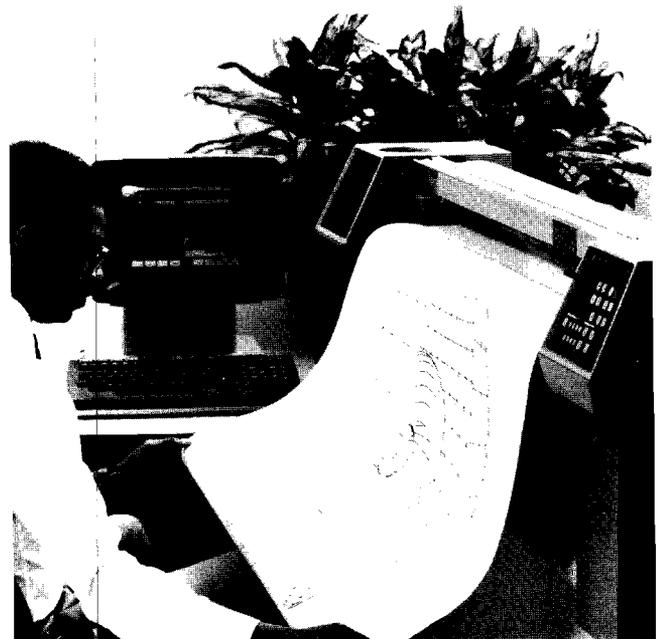
### Topping Off Our Plotter Family

The new HP 7586B combines single sheet and roll-feed plotting capabilities in a single unit. Now those who need both capabilities can buy one plotter to satisfy all their plotting requirements. The HP 7586B is designed to handle A4/A-size through A0/E-size sheet media, and roll media from 10.5 to 36.2 inches wide. Competitive roll-feed plotters require special sprocketed media of a fixed width and cannot accommodate smaller media. The HP 7586B however, uses non-sprocketed plain paper, vellum, double-matte polyester film, and tracing bond.

In addition, the HP 7586B draws frame-to-frame long-axis plots of up to 150 feet long. In the frame-to-frame technique, a long plot is divided into page length windows and plotted one section at a time. A built-in optical sensor automatically aligns each section to the previously plotted section to produce one continuous plot. This technique provides long axis plotting at a price much lower than other methods. Long axis plotting is especially beneficial for PERT charts or full-size engineering drawings. The HP 7586B also has a built-in accuracy calibration program so you can check your own plotter accuracy.

### Enhancements to Our Plotter Family

We've added more firmware for increased plotter intelligence, and reduced the prices on both the HP 7580B and the HP 7585B. This means you can have more for less!



Twenty-one character sets in three different fonts provide a wide range of labeling and annotation capabilities. Because so many users have international dealings and offices in foreign countries, Japanese Katakana and European character sets are now included. A downloadable character set also allows you to program these plotters with special symbols that can be accessed to meet your specific needs.

### All Three Drafting Plotters Share These Features:

- High addressable resolution of 0.025 mm (0.000984 in.)
- 60 cm/s maximum speed and 4 g acceleration
- 8-pen carousels with automatic pen capping
- Choice of media types
- Choice of pen types in a variety of colors and widths
- HP-GL area fill commands
- 18K-byte buffer
- Switch-selectable dual interface with four handshaking modes and eavesdrop
- Simple, easy to use operation
- High reliability and quality.

## Expanded Capabilities Package for the New HP 2563A

The new HP 2563A line printer from HP has been shipping now for a few months. We have introduced the printer with six- to eight-week availability and at roughly half the price of the HP 2608S.

The *expanded capabilities package*, Option 500, is a bundled package of standard options for the HP 2563A.

Option	Description
001	Character Set (line draw, math symbols, large block character sets)
004	Character Set (high density, Roman 8)
005	Character Set (high density, Roman 8 italics)
068	3-Pack of Ribbons
110	Sound Cover
112	Enclosed Stand

Why do we offer this bundled option?

- To provide a means to “fully equip” the HP 2563A.
- To offer a package that shows most of the features of the HP 2563A at a reduced price.
- To give you a tool to sell more options on the printer with less work.

## Bar Codes for the HP 2563A

One of the most common questions we heard last year was, “Do you have a 300 lpm printer that does bar codes?” We finally do, and it is the HP Series 300LP, Model 2563A. Hopefully, you know that it was introduced in December, 1983, and is shipping in quantities. But how do you print bar codes?

To print bar codes you must order the optional character set, Option 007, and provides Codes 3 of 9, Interleaved 2 of 5, and Industrial 2 of 5. The use of the character set is described in your training material and in the literature provided with each product. Printing bar codes requires a shift into the desired character set.

If you need to produce labels to meet MIL-STD 1189, order the additional OCR character sets, Option 004. Contact your HP sales rep for ordering information.

## Additional System Support for HP 2687A and HP 2688A

The HP 2687A and HP 2688A office and workstation laser printers are now supported on additional systems.

### The HP 250 and the HP 2687A

- The HP 2687A is supported as an RS-232 device. An RS-232 modem cable (P/N 8120-3258) is required for interfacing. Order #17355A (2 meter cable) from HP's Computer Supplies Operation.
- The HP 2687A is supported on the new release of the HP 250 operating system.
- For multiple printers per system, contact your HP sales rep for details.
- Order the HP 2687A printer from HP with Option 251.

### The HP 1000 A-Series and the HP 2687A

- The HP 2687A printer requires the HP 12040B multiplexer. (The HP 12005B I/O card does not support X-on/X-off protocol, and therefore does not support the HP 2687A printer.)
- The printer is supported as an RS-232 device. Order RS-232 I/F cable #92219G (3.8 meter) from Computer Supplies Operation. RS-422 support is expected late in the fourth quarter of FY84.
- Order the HP 2687A printer with Option 214.

### The HP 9000 Series 200 and the HP 2688A

- You must have the HP TeX document formatting software on your HP 9000 Series 200. (See "New Document Formatter for HP 9000 Series 200 Users" in this issue.)
- The HP 2688A is supported as an HP-IB device.
- Any line printer output can be directed to the HP 2688A printer (the HP TeX driver provides this capability).
- Order the printer with Option 850 and 040.

### The HP 1000 A-Series and the HP 2688A

- The HP 2688A printer will be a "special" on the HP 1000 A-Series. A special driver must be ordered from HP.
- Graphics support is under investigation.

For further pricing and availability information, call your HP sales rep.

## 3½" Microfloppy and Mini Winchesters on the HP 9845B/C

Now there's a solution for data interchange between HP 9845B/C and HP 9000 Series 200 along with an inexpensive mass storage solution on the HP 9845B/C. All it takes is a special third party MSROM (developed by Structured Software Systems in conjunction with Hewlett-Packard) and a low-cost/high-performance flexible or Winchester disc drive from HP.

Frank Key, president of Structured Software Systems, Inc. (SSS), has just announced a mass storage ROM for the HP 9845B/C. The mass storage ROM can be used independently or in conjunction with the HP 9845 Mass Storage ROM. It will allow the HP 9845B/C to support the HP 9121D/S (3½" microfloppy disc drives), HP 82901/2M (5¼" flexible disc drives), and HP 913XX (5, 10, or 15 Mb Winchester disc drives).

Also, if you need to exchange serial data between the HP 9845 and the HP 9000 Series 200, all you will need is the MSROM and the SSS LIF Utilities Software to translate the data from one system to the other.

For more information on how to order this ROM and the software contact your local HP sales rep.

## HP 9130A Obsolete

The HP 9130A has been obsoleted as of February 1, 1984. This is the 5¼" flexible disc drive that was specifically designed for and works exclusively on the HP-86A. The HP-86A was obsoleted on December 1, 1983.



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